# *Collaborations Among Companies and Universities – And Finding Funding Sources*

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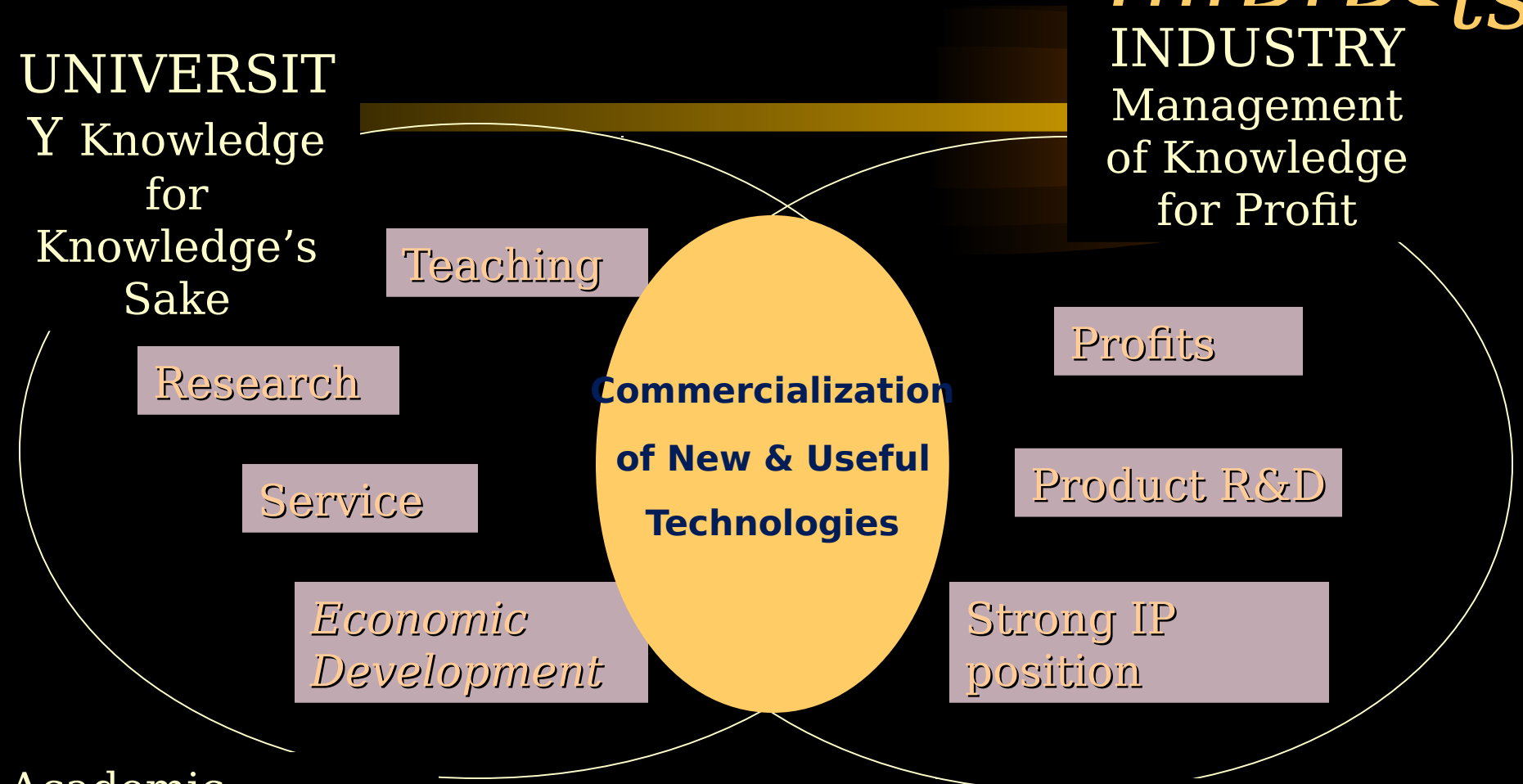
Department of Defense
Northeast Regional Council
November 4, 2005

# *Working Together for A Common Goal*

- Determining your Goal
- Finding the Right Partner
- Leveraging your Partnership for Funding
  - SBIR/STTR – many federal agencies
  - ATP – Department of Commerce
  - GOALI – National Science Foundation
  - IUCRC – National Science Foundation
  - TTIP – New York State Office of Technology and Academic Research (NYSTAR)

# *Conflicting Values + Common Interests*




Academic Freedom

Open Discourse

Confidentiality

Limited Public Disclosure

Slide courtesy of Peter Kramer, Bristol Myers Squibb Company

# UNIVERSITY AND INDUSTRY:
## *Two diverse cultures*

Industry Researchers

are from MARS

**University Researchers**

**are from Venus**

# *Sorting out your Partnership*

## What do Both Parties Want?

Long-term relationships

Mutual collaborations – balanced partnerships

Innovative approaches to new technology

### What does a Company Want?

- Protection of confidential information
- Advantage over competitors
- Up-front knowledge of pricing
- New employees

### What does a University Want?

- Research funding
  - Leverage federal & state funds
- Income stream from IP
- Publication rights
- Support for Students

# *Relationships with a University*

- Faculty as Principal Investigator (PI)
  - with official permission from university
  - If faculty owns small firm, assign *someone else* PI
- Can function in other roles on funded projects
  - As senior personnel
  - As consultants
    - separate from university
  - University as subcontractor
- University facilities provide analytical and other support

# CULTURAL DIVERSITY

FLEXIBILITY and UNDERSTANDING IP ISSUES

**is KEY!**

# What funding programs could you utilize?

# *Advanced Technology Program*

- http://www.atp.nist.gov/
- Funds high risk research
- No competitions in FY05
- Monitor Federal budget decisions to see if ATP is restored in the NIST / Department of Commerce budget

# *GOALI: Grant Opportunities for Academic Liaison with Industry*

- National Science Foundation
  - www.engr.nsf.gov/goali
- Supports eclectic mix of industry-university linkages
- Address technical challenges and enhance skilled workforce
- Industry can participate in the scope of the work or share in the results
- Application details:
  - No set application date
  - awards $300 - $500K for multi-year projects
  - universities are the applicants

# *I/UCRC: Industry University Cooperative Research Centers*

- National Science Foundation
  - http://www.nsf.gov/eng/iucrc/
- IUCRC = long-term partnerships among industry, academe, and government
- NSF provides small investment - center members provide funds for center programs
- stimulate industry/university cooperation by focusing on fundamental research recommended by Industrial Advisory Boards

# *TTIP: Technology Transfer Incentive Program*

- New York State Office of Technology and Academic Research (NYSTAR) http://www.nystar.state.ny.us/ttip.htm
- Speeds transfer of new ideas and new technology from academia to the marketplace
- Helps NY companies and universities commercialize high-tech innovations in partnership
- Supports a wide array of activities
  - improvement of product prototypes and existing commercial products
  - new product development
  - development of manufacturing processes to commercialize prototypes
  - filing patent applications
- Universities apply; industries provide a match; several application cycles each year; awards up to $500K for multi-year projects

# *Research Opportunities Reserved for Small Businesses*

## SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

## SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM

Updated by SBA 01/31/05; Adapted by RIT 11/04/05

# SBIR / STTR Program Mission

Supporting scientific excellence and technological innovation through the investment of federal research funds in critical American priorities to build a strong national economy...

*one small business at a time*.

# Program Descriptions

- Small Business Innovation Research (SBIR)

**2.5%**

Set-aside program for small business concerns to engage in federal R&D -- with potential for commercialization

- Small Business Technology Transfer (STTR)

**0.3 %**

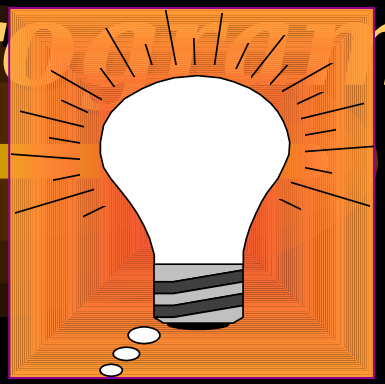
Set-aside program to facilitate cooperative R&D between small business concerns and U.S. research institutions -- with potential for commercialization

*AWARD ALWAYS MADE TO SMALL BUSINESS*

# SBIR / STTR: 3-Phase Program

## PHASE I

- ➔ Feasibility Study
- ➔ $100K and 6-month (SBIR) or 12-month (STTR) Award



## PHASE II

- Full Research/R&D
- $750K and 2-year award (SBIR / STTR)

## PHASE III

- Commercialization stage
- Use of non-SBIR / STTR funds

# SBIR / STTR Participating Agencies

TOTAL ~ $2.0+ B
FY 2005

- DOD SBIR/STTR
- HHS SBIR/STTR
- NASA SBIR/STTR
- DOE SBIR/STTR
- NSF SBIR/STTR
- DHS SBIR **New**
- USDA SBIR
- DOC SBIR
- ED SBIR
- EPA SBIR
- DOT SBIR

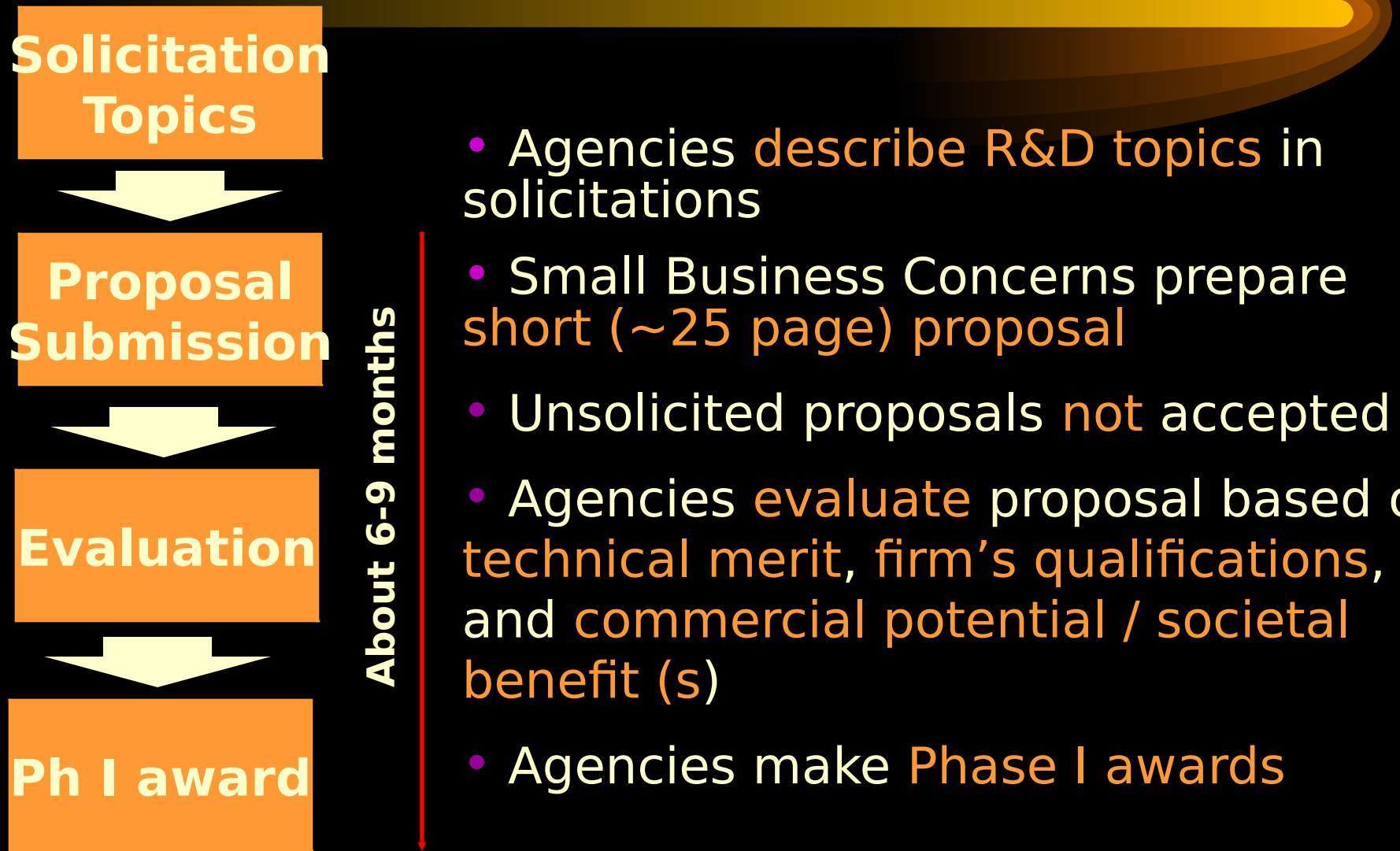
# SBIR ELIGIBILITY

- ✓ Organized for- profit U.S. businesses
- ✓ 51% U.S.- owned by individuals and / or (see other criteria)
- ✓ ≤ 500 employees (including affiliates)
- ✓ PI's primary employment must be with the small business

# STTR ELIGIBILITY

- ✓ Applicant is Small Business
  - Subsidiaries are NOT eligible for STTR program
- ✓ Formal Cooperative R&D Effort
  - Minimum 40% by small business
  - Minimum 30% by U.S. research institution
- ✓ U.S. Research Institution
  - ✓ College or University, other non-profit research organization, or Federal R&D center
- ✓ Intellectual Property Agreement
  - Spell out Allocation of IP Rights and rights to carry out follow-on R&D and commercialization

# Standard Phase I Process




- Agencies describe R&D topics in solicitations
- Small Business Concerns prepare short (~25 page) proposal
- Unsolicited proposals not accepted
- Agencies evaluate proposal based on technical merit, firm's qualifications, and commercial potential / societal benefit (s)
- Agencies make Phase I awards

# ✓ Differences among Agencies

- Number and Timing of Solicitations
- R&D Topic Areas -- (broad vs. focused)
- Dollar Amount of Award (Phase I and II)
- Proposal Preparation Instructions
- Financial details (e.g., Indirect Cost Rates, Gap Funding)
- Receipt Dates
- Proposal Review Process
- Proposal Success Rates
- Type of Award (contract or grant)

# Agency SBIR Differences

- Contracting Agencies
  - → Agency establishes plans, protocols, requirements
  - Highly focused topics
  - Procurement mechanism for DOD and NASA
  - More fiscal requirements

- Granting Agencies
  - → Investigator initiates approach
  - Less-specified topics
  - Assistance mechanism
  - More flexibility

DOD HHS/NIH NASA ED EPA DOT

HHS/NIH NSF ED USDA DOE

# SBIR AND STTR PROGRAMS

## CRITICAL DIFFERENCES

- Research Partner

  SBIR: Permits research institution partners
  Outsource ~ 33% Phase I and 50% Phase II R&D

  STTR: Requires research institution partners

  40% small businesses / 30% research institution

- Principal Investigator

  SBIR: Primary employment must be with small business concern

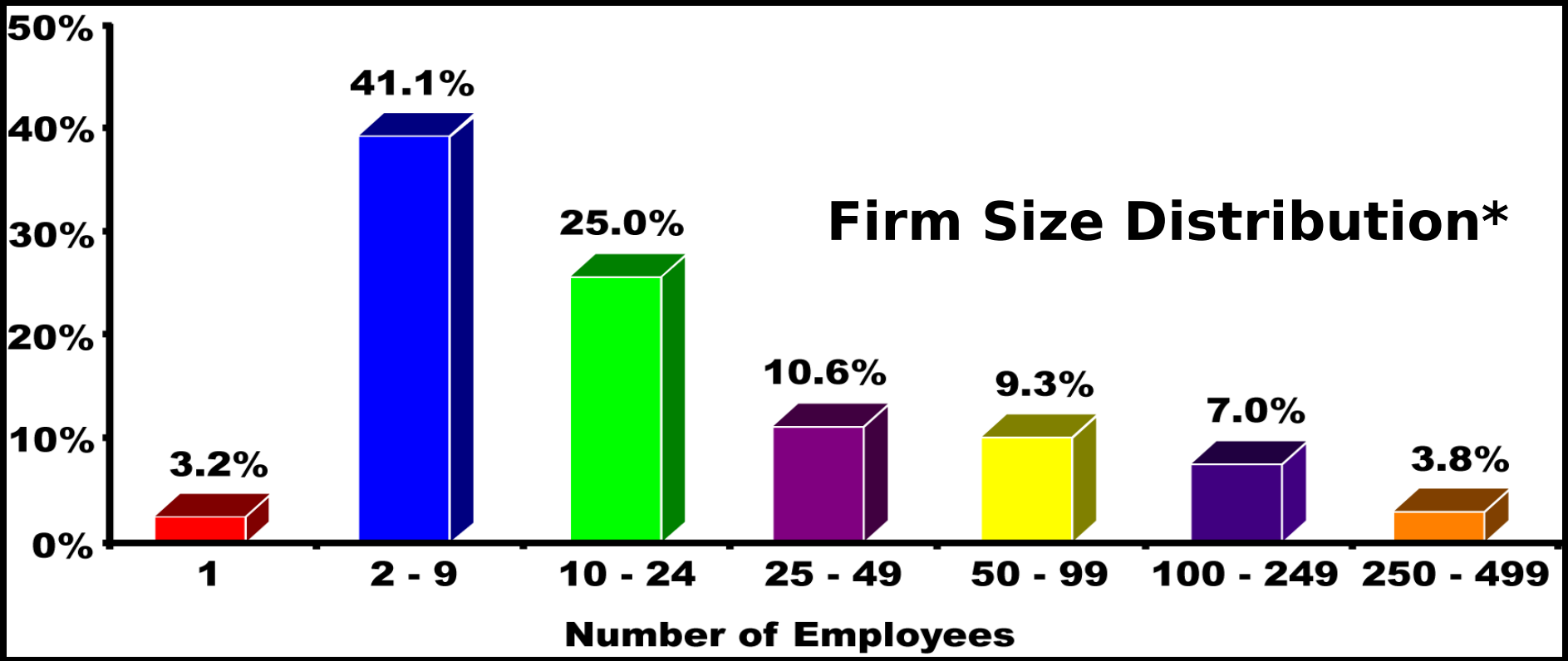
  STTR: Primary employment not stipulated

  PI can be from research institution and/or from small business concern*

* Discuss with Specific Agency

# Who Participates in SBIR?

- ✓ Firms are typically small and new to the program
- ✓ About 1/3 are first-time Phase I awardees
- ✓ Small high-tech firms from across the country




*FY01 Phase I DOD Award

# Advice from Awardees

- ✓ Don’t judge an agency’s interests by its name
- ✓ Understand agency’s mission & needs
- ✓ Get to know your agency Program Manager
- ✓ Read solicitation and follow instructions

# Advice from Awardees

- Don’t depend solely on SBIR funding
- Don’t go it alone - use support systems
- Plan and specify an outcome
- Win or lose - get and review evaluations

# For more information.....

- **Individual agency websites**
- Cross-agency website:
  http://www.sbirworld.com
- Small Business Administration
  http://www.sba.gov/sbir/

➡Conferences / workshops
 Topic search engine for all agencies
 Research university

# Top 10 List

## "Why Seek SBIR / STTR Funding?"

10. Over $2.0 Billion available

9. NOT A LOAN - no repayment

8. Provides recognition, verification and visibility

7. Potential leveraging tool to attract venture capital/other sources of $$$

6. Fosters partnerships (companies + academia)

5. Stimulates local and state economies = stronger national economy

4. Provides seed money to fund high risk projects

3. Intellectual property rights are retained by or licensed to the small business

2. Small businesses are recognized as a unique national resource of technological innovation

AND

1. To make economic and societal contributions to America

SBIR / STTR slides courtesy of the SBA